

The second main section of the yearbook includes 16 articles, covering a wide range of issues relating to 'The Developing Zoo World'. These papers cover reproduction, quarantine, exhibits, genetics, behaviour and introduction of captive animals to the wild.

This section includes a paper by Poole (formerly of UFAW) and others on 'Social behaviour and breeding physiology of a group of Asian elephants, *Elephas maximus* at the Pinnewala Elephant Orphanage, Sri Lanka'. The authors emphasize the improved welfare of the elephants when several adult males and females were kept together, with access to plenty of open space with vegetation, opportunities for bathing and a warm climate. The authors recommend that zoos keep Asian elephants in mixed-sex groups to improve herd behaviour and increase reproduction. This is a problem for most zoos, due to constraints of climate, space and labour, but Poole *et al* stress the importance of the welfare to the individuals concerned, and to the maintenance of captive populations of *Elaphus maximus*.

The *International Zoo Yearbook* is always interesting, covering the science of the husbandry and conservation of such a wide range of animal species. This volume with its focus on wild felids, many species of which are threatened or endangered, highlights the fact that their conservation is physically difficult and expensive and requires cooperative management programs between zoos and other wildlife bodies.

Australian zoos have been at the forefront of cooperative captive management for the past 20 years and now play a major role internationally. This is possible because of the recognition of its vital importance by management and by Zoological Boards. As Kelly observes in his paper's conclusion: 'the present and projected future conservation activities of innovative, well-managed zoos will distinguish such institutions from the zoos of yesteryear'.

Robert Baker
ANZCCART
Adelaide, Australia

Handbook of Trout and Salmon Diseases, 3rd edition

R J Roberts and C J Shepherd (1997). Fishing News Books: Oxford. 192pp. Hardback. Obtainable from the publishers, Blackwell Science Ltd, Osney Mead, Oxford OX2 OEL, UK (ISBN 0852382448). Price £39.50.

It is a real pleasure to see the *Handbook of Trout and Salmon Diseases* in its third edition. This handy farmers 'bible' has matured with the industry.

The expected basic format of the previous edition is unchanged, beginning with simple information dealing with anatomy and husbandry, including simple water chemistry – although the latter is fairly limited in scope to the major parameters of oxygen, pH and ammonia. Infectious diseases are introduced before being reviewed in the context of practical production phases; this section has always been deservedly regarded as useful and popular. New and useful photographs are included which enhance the overall value of the book to the farmer.

Unfortunately, the topic of fish welfare doesn't get much of an airing. It would have been valuable to introduce this properly to the latest generation of fish farmers, highlighting stocking levels and slaughter as major areas where work is ongoing with regard to fish welfare.

Although major problems in the trout industry are perhaps sidelined a little, the salmon information is well updated. However, more recent understandings of Proliferative Kidney

Disease are poorly represented and Rainbow Trout Fry Syndrome receives scant attention, yet these are possibly the two most economically significant diseases for trout farmers in the UK. Even an international approach should have covered them more thoroughly.

The treatment section has been updated but perhaps insufficiently; no mention is made of the prescription 'cascade' – although this may be sacrificed to internationalism; more information and emphasis on vaccination would have been useful; the move away from antibacterials is not explored. New compounds for treatment of sea lice such as azamethaphos and cypermethrin are introduced, florphenicol and the newer quinolines are also mentioned. The sample calculations have been retained and are as useful as ever.

The book succeeds as a quick on-farm reference. Perhaps where it is beginning to fail is in that the subject has grown so much that its snippets now leave us looking for more. It is no exaggeration to state that this book's previous incarnations have been seen on farms all over the world, often adorned with coffee-rings and fish scales, but always well thumbed. This third edition still deserves to be one of the fish farmer's source books for immediate reference. It may, however, be more appropriate for the fourth edition (and I hope there will be one) to publish after a major rewrite and with fuller references.

Peter W Scott
Zoo and Aquatic Veterinary Group
Winchester, UK

Behavioral Approaches to Conservation in the Wild

Edited by J R Clemmons and R Buchholz (1997). Cambridge University Press; Cambridge. 382pp. Hardback and paperback. Obtainable from the publishers, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU, UK; or for North American orders, from 40 West 20th Street, New York, NY 1011-4211, USA (ISBN 0521580544 hardback, or 0521589606). Price £55/US\$80.00 hardback, and £19.95/US\$29.95.

Against the background of an alarming loss of biological diversity, conservation biology is becoming an urgently needed science in its own right. The complex nature of extinction processes and many practical problems which must be solved in the near future call for a multidisciplinary and integrative approach incorporating theoretical as well as applied approaches.

The editors of this book try to describe the importance of behavioural science to conservation biology. They assume, 'that animal behaviourists could play a larger, more productive role in conservation biology than they have so far'.

In 382 pages (including acknowledgements and index), subdivided into three parts with a total of 15 chapters, 29 authors discuss their individual views, review their fields of research and describe examples of the functional importance of behavioural science to conservation. The authors wish to stimulate behavioural researchers to think about their possible contribution to the conservation of biological diversity and to educate conservationists on the relevance of this discipline.

In the general part, the traditional approaches used in ecology and ethology are discussed, together with the objectives and methods of conservation biology. The need for involvement of animal behaviour specialists in conservation projects is described and is illustrated by several